First results from VERTICO: The Virgo Environment Traced in CO Survey

María J. Jiménez-Donaire[1], Toby Brown[2], Nikki Zabel[3], and the VERTICO collaboration

[1] *Observatorio Astronómico Nacional (IGN), C/Alfonso XII, 3, 28014, Madrid, Spain*

[2]*Herzberg Astronomy and Astrophysics Research Centre, National Research Council of Canada, 5071 West Saanich Rd, Victoria, BC, V97 2E7, Canada*

[3]*Kapteyn Astronomical Institute, University of Groningen PO Box 800, NL-9700 AV Groningen, The Netherlands*

I will present the first results from the ALMA large program VERTICO: The Virgo Environment Traced in CO Survey. VERTICO is a pioneering large program that provides deep, high-resolution maps of CO(2-1) in a sample of 51 spiral galaxies in the Virgo Cluster, using the Atacama Compact Array. The key goal of the survey is to investigate the effect of environment on molecular gas to understand the physical mechanisms that can perturb the molecular disks, as well as its link to star formation and, ultimately, galaxy evolution.

I will discuss recent findings from early science VERTICO works, which show that the environmental mechanisms observed to perturb HI in interacting, star-forming galaxies, also appear to affect their molecular gas reservoirs. VERTICO indicates that galaxies with large HI deficiencies, have steep and truncated molecular gas profiles. At the same time, their molecular gas disks seem to follow a Kennicutt-Schmidt (KS) relation that agrees well with previous findings using resolved molecular gas maps by IRAM large programs in field galaxies like HERACLES. These new data also indicate a variable molecular gas efficiency, evident by the significant scatter seen in individual KS relations, not only from galaxy to galaxy, but also within galaxies. These variations are particularly clear in some targets which are experiencing tidal interactions and ram-pressure stripping.